NRCS Technology News

June 2004

"NRCS *Technology News,*" provided by Science and Technology, delivers pertinent information to our customers about new technology, products, and services available from the Soil Survey and Resource Assessment and the Science and Technology deputy areas.

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MESSAGE FROM THE CHIEF

Excellence in Technology is an Important Goal of the NRCS Reorganization
Bruce I. Knight, Chief, Natural Resources Conservation Service

Chief Bruce I. Knight

With our nation making a record investment in conservation on private lands, it is more important than ever that we support our conservation efforts with the latest scientific knowledge and tools.

That's why we made strengthening multidisciplinary technology support to States one of the major objectives of the NRCS reorganization – and why many aspects of the reorganization affect our science and technology delivery system.

National Technology Support Centers
One of the most far-reaching actions in our reorganization is the creation of National Technology Support Centers that will concentrate much of our scientific capability in three locations and consolidate similar functions to enhance collaboration, communication, and coordination.

We have an excellent reputation for our science, and we have seen many advances in recent years. But our expertise had become specialized and scattered across the nation, and we were not structured to get maximum benefit from of our hard work in the areas of science and technology. The new structure will strengthen science and technology through a multidisciplinary approach and consolidation of technical experts.

Creating well-focused Centers will also better align our all-important human capital resources with our mission, goals, and organizational objectives. The Centers — in Greensboro, North Carolina (East), Fort Worth, Texas (Central), and Portland, Oregon (West) – will help us build an organization better prepared to meet future conservation challenges through more direct assistance to states, increased technical training and additional support for technical references that will ultimately result in enhanced customer service.

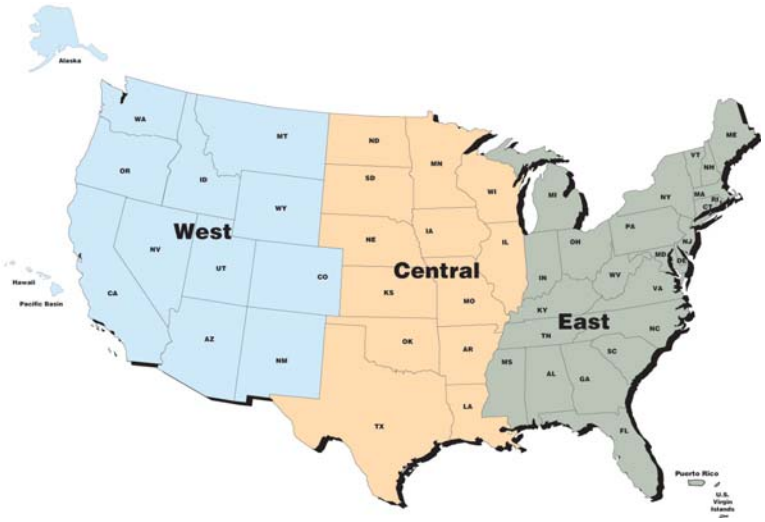
Additionally each Center will have its own focus areas:
- Bio-energy, air quality/atmospheric change, and water quality/quantity in Portland;
- Grazing lands, wetlands, and wildlife in Fort Worth
- Animal waste utilization technology, soil quality, and social sciences in Greensboro.

The Centers are designed to put the right people together to work on the right issues. They will provide more opportunities for advancement for our technical staff and improve our ability to

communicate and coordinate our science and technology efforts. We will keep them on the cutting edge of resource issues by adjusting the emphasis areas in each center to accommodate emerging concerns and make sure they continue to meet the needs of the NRCS field offices and our customers.

Resource Inventory and Assessment Division
Another part of consolidating like functions is our decision to combine the Resource Inventory Division and the Resource Assessment Division into a single Resource Inventory and Assessment Division. This division will also operate three Remote Sensing Laboratories, co-located at the three National Technology Support Centers.

International Programs Division
Because our international activities largely consist of sharing resource information and related science and technology, as well as participation in resource-oriented international meetings, we felt it made sense to move the International Programs division to the Soil Survey and Resource Assessment deputy area.



Approved NRCS Regions

Animal Husbandry and Clean Water Division
We are moving the Animal Husbandry and Clean Water Division to the Science and Technology deputy area. This places our experts in soil, water, animals, and plants together, where they can work more in a more coordinated and interdisciplinary manner to meet today's complex resource challenges.

Conservation Boot Camp
Although it is not an actual part of the reorganization process, re-establishment of the Conservation Boot Camp concept gives a highly effective way to strengthen the role of science and technology in our organizational culture. The Conservation Boot Camps will help to develop the highly trained workforce we will need for the future.

I know the reorganization is disrupting the lives of many of our employees in scientific disciplines and their families. But I feel the new structure will also create significant opportunities for these same employees to contribute even more strongly to the scientific base of our conservation effort. The next golden age of conservation depends heavily on effective delivery of science and technology.

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CONSERVATIONIST'S CORNER

The Importance of Measuring Accomplishments
Guest Conservationist: Katherine Gugulis
Deputy Chief of Strategic Planning and Accountability

Katherine Gugulis

The Natural Resources Conservation Service recognizes the importance of measuring accomplishments. The Agency answers questions about the budgeting and performance for Congress, the Office of Management and Budget, and the General Accounting Office. Budget and performance integration, when reduced to its simplest terms, means that we must justify and report our accomplishments and how we spend our appropriated funds. The inability to provide this information can result in the reduction of funds to the Agency and important conservation work going undone.

To provide the information our customers need and to streamline our field office business processes, the Agency is making an ambitious effort to integrate our electronic field business processes. This includes linking information from the Electronic Field Office Technical Guide, the Toolkit Customer Planning Tool, the cost share contracting tool (PROTRACTS), the Performance Results System (PRS), the Total Cost Accounting System (TCAS), and the Conservation Information System (CIS). The goal of integrating these systems is to be able to capture cost and performance information by program while minimizing the time required for data entry and maximizing the value of the data for customers and clients. These systems are Web-based to provide more transparency and quicker and easier access to management information.

Additional Web-based tools are being developed to provide better accountability information to further streamline field business processes. The Program Operation Information Tracking System warehouses program information from multiple sources. The Conservation Journal (CJ) will become the home page for each field conservationist that will feed performance and timekeeping as well as provide connection to applications the field needs. The Conservation Effects Assessment Program (CEAP) will provide data to help the Agency determine the outcomes for our field activities.

A typical day for a field conservationist in the not too distant future might be described as follows: A field conservationist will arrive at the office having brought their information system up on their portable computer screen by remote wireless technology. By entering an individual ID and password, the system will automatically load their CJ. The employee will check the day's schedule showing which customers are to be visited and what program-specific activities are to be performed. Once the schedule is verified and the employee selects the correct Service Center Information Management System customer file, CJ will automatically download needed information to the portable computer, such as Toolkit files, contract files, Thunderbook files, orthophotography, and other information needed based on the day's schedule. As the conservationist drives to the first field location, the onboard GPS-enabled portable computer will provide driving directions.

Upon arrival at the job site, the field employee can prepare or update a Toolkit plan using the appropriate conservation system guides and current ortho-photography, and prepare a PROTRACTS cost share contract. Documents can be printed from the wireless computer

and printer to obtain necessary signatures. As the CJ schedule is completed or modified during the day, it will have kept track of employee whereabouts, work tasks, and products. Upon return to the office, it uploads planning results, progress, and time and attendance data into Toolkit, PRS, and TCAS. The time and progress data are periodically approved by the employee and submitted by the office information system. The outcome of the practices applied as a result of the employee's work with customers will be extracted through models within the CEAP framework to provide outcome-type accomplishment reports.

This scenario may sound futuristic, but all these technologies either exist now or are within 5 years of development. While the conservation tools have and will continue to change, the reasons for completing our tasks remain the same. If the Agency is to retain its world-renowned status as a premier natural resource agency, we must continue to be accountable and to move forward with integrating and appropriately automating our field business processes so that we are the most efficient in carrying out our mission.

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NEW PRODUCTS AND SERVICES

#1 How to Conduct a Situational Analysis Fact Sheet Released

"Using a Multidisciplinary Approach to Conduct a Situational Analysis," a new fact sheet in the Social Sciences Institute's "People, Partnerships, and Communities" series, is available in draft format. A situational analysis is a systematic method of collecting, analyzing, and delivering information about the internal and external factors that affect current resource management. A situational analysis employs qualitative and quantitative methods to address issues, problems, opportunities, and challenges facing stakeholders within a defined geographic area or an area of common interest, such as animal waste management. By conducting a situational analysis, conservation planners can discover needs and problems facing stakeholders. This publication presents useful step-by-step information on how to conduct an analysis effectively. To request a copy of "Using a Multidisciplinary Approach to Conduct a Situational Analysis," visit http://www.ssi.nrcs.usda.gov, click on fact sheets and select PPC 32.

An NRCS soil conservationist discusses urban soil conservation with a customer in Los Angeles.

For more information, contact:
Gail Brant
Social Sciences Institute
610-792-9207
gail.brant@usda.gov

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#2 Culturally Significant Plants Presentation Available

Virginia Iris. Photo by Robert H. Mohlenbrock. Courtesy of USDA NRCS Wetland Science Institute.

A PowerPoint presentation titled, "Ethnobotany of Culturally Significant Plants" is available for your use as a general education tool. The historical function of native plants has become of interest to many tribal peoples and to the general public. This presentation was developed as a tool to satisfy this interest.

Users can go to the Kansas PMC Web site (http://plant-materials.nrcs.usda.gov/kspmc) and click on the link for "The Ethnobotany of Culturally Significant Plants." The entire PDF file of the presentation may be viewed, or users can download any of the slides of the 65 species featured on the site. Users can compile their own unique PowerPoint presentations on culturally significant plant species.

Each slide includes a plant photo, common and scientific names, and plant facts about medicinal, cultural, and food information. For more in depth technical information, click the links to the corresponding Species Profile or Plant Guide on the PLANTS Web site at http://plants.usda.gov.

For more information, contact:
Patrick J. Broyles
Plant Materials Center
785-539-8761
patrick.broyles@ks.usda.gov

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#3 New Alternative Enterprise and Agritourism Resources Available

Four new products about farm and ranch alternative enterprises and agri-tourism are now available from the NRCS Resource Economics and Social Sciences Division (RESS). Products can also be obtained from the division's Web site at www.nrcs.usda.gov/technical/RESS/altenterprise or by calling RESS at 202-720-2307.

"Taking the First Step: Farm and Ranch Alternative Enterprise and Agritourism Resource Evaluation Guide" is a workbook designed to assist farmers and ranchers in identifying alternative income-producing agricultural enterprises and agritourism opportunities. The guide helps decision-makers assess the resources of family, nature, and community as a first step toward developing a business and marketing plan.

"Alternative Enterprises and Agritourism: Farming for Profit and Sustainability Resource Manual, 2004" is a 2,300 page resource manual that includes descriptions of articles, publications, books, and Web sites. The manual is available as a CD or a 225 page paper copy of the table of contents and abstracts. Information about experts and other contacts is also included.

An example of a farm store.

"Income Opportunities For Your Farm: Alternative Enterprises and Agritourism Resources CD" has three publications and two resource sections. They include: (1) "Taking the First Step: Farm and Ranch Alternative Enterprise and Agritourism Resource Evaluation Guide"; (2) "Alternative Enterprises and Agritourism: Farming for Profit and Sustainability Resource Manual, 2004"; (3) "Building A Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses"; (4) "Financing and Funding Sources"; and (5) "Links to Other Resource Information".

The January 2004 "Alternative Enterprises, Agritourism and Economic and Rural Community Development People Resource Directory" includes professional staff and entrepreneurs at the local, state, and national levels who are involved in the direct marketing of agricultural products and other on-farm and ranch agritourism activities.

For more information, contact:
James A. Maetzold
Resource Economics and Social Sciences Division
202-720-0132
jim.maetzold@usda.gov

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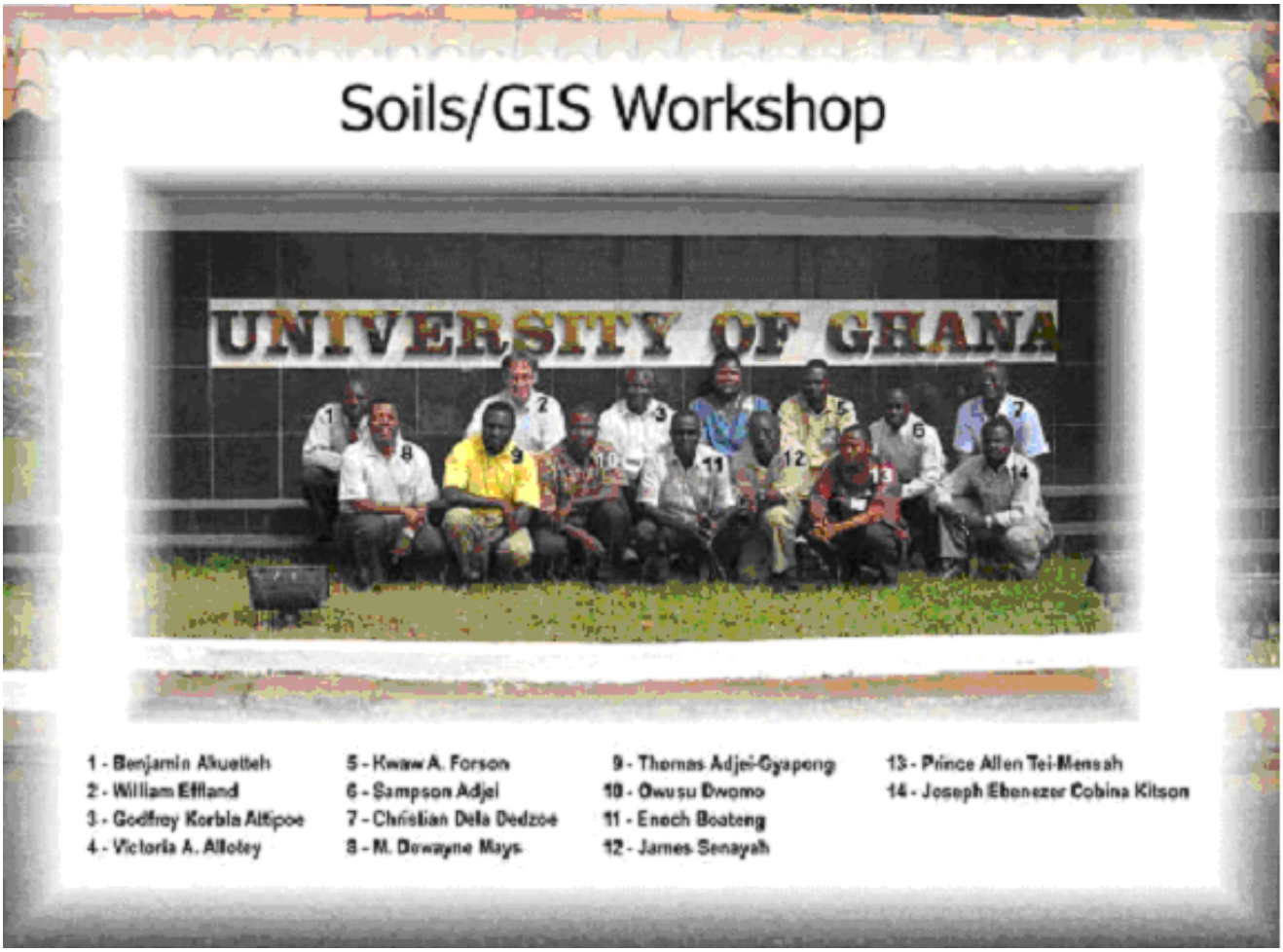
TECHNOLOGY TRANSFER

#4 NRCS Soil Scientists Conduct Soils/GIS Workshop in Ghana

Soil scientists M. Dewayne Mays, Ph.D. and William R. Effland, Ph.D. conducted a Soils/Geographic Information Systems (GIS) Scientific Information Exchange Workshop in early March. The workshop was conducted for selected research soil scientists and soil technicians from the Ghana Soil Research Institute (SRI). Partial funding for this activity was provided by the United States Agency for International Development through USDA Foreign Agricultural Service/International Cooperation and Development Program Area. The workshop venue was the GIS computer laboratory at the Centre for Remote Sensing and Geographic Information Services on the University of Ghana, Legon campus in Accra.



During the week of March 7-11, 2004, a joint Ghana SRI and USDA NRCS eight-member team sampled six pedons (total of 43 bulk samples) in the Upper Afram Basin near the village of Ejura. SRI and NRCS soil survey laboratories will each complete standard soil characterization analyses according to each laboratory's accepted methods. A scientific poster paper presentation jointly authored by the Ghana-United States field sampling team is planned for the International Annual Meetings of the Soil Science Society of America in Seattle, Washington, in the fall.

For more information contact:
Bill Effland
Soil Survey Division
202-720-8692
william.effland@usda.gov

or

M. Dewayne Mays
National Soil Survey Center
402-437-5138
dewayne.mays@usda.gov

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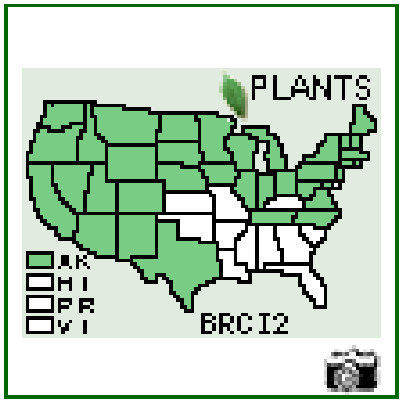
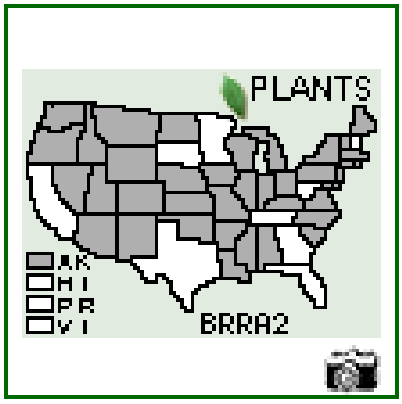
WEB-BASED TECHNOLOGY

#5 New Features in PLANTS Profiles

The PLANTS Database has recently added several new features to its plant profiles. There are now thumbnail distribution maps for all species within a genus. These maps are color-coded to display native species (green) or introduced species (gray). Additionally, a camera icon is present if PLANTS contains a downloadable image for the species. The same functionality is available for infraspecific taxa within a species.



Color-coded thumbnail map displays native species in green.



Color-coded thumbnail map displays introduced species in gray.

To view a generic plant profile on the PLANTS Database, visit the homepage at http://plants.usda.gov and utilize the PLANTS Name Search bar. Select scientific name from the dropdown box, input a genus, such as Lilium, and search.

For more information, contact:
Scott Peterson
National Plant Data Center
225-775-6280 x11
speterson@po.nrcs.usda.gov

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#6 PLANTS Database Usage Increases an Additional Twenty-Seven Percent

As expected, The National Plant Data Center's National PLANTS Database set another usage record for April 2004. Usage increased by 27 percent from March, recording a total of 15.8 million hits. This record also doubles last year's April usage of 7.5 million hits. User hits are likely to continue to climb in May. To visit PLANTS, go to http://plants.usda.gov.

For more information contact:
Scott Peterson
National Plant Data Center
225-775-6280 x11
speterson@po.nrcs.usda.gov

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#7 High Tech in Texas

Developing a Web site for the 2004 EQIP (Environmental Quality Incentives Program) in Texas presented a challenge. All 254 counties in Texas present unique EQIP resource concerns, eligible practices, cost lists, and ranking criteria worksheets. With limited staff and a short timetable, the NRCS Texas State Office approached the Natural Resources Inventory and Analysis Institute (NRIAI) for assistance in developing their 2004 EQIP Program Web site. The effort proved to be a success.

The NRIAI and NRCS staffs collaborated with the Webmaster to design a Web site that displayed the information in HTML Web pages. The resulting Texas EQIP homepage contains a dropdown menu for all 254 counties. The site has links to Web pages for each county and a link to a Web page listing 23 statewide resource concerns. The EQIP homepage also links to forms, fact sheets, and other important information.

Three primary functions were developed:

1. An Access database prepared by NRIAI allowed district conservationists to develop and edit specific EQIP information in HTML format for each county.
2. The public EQIP site included links from each county's Web page to its specific statewide resource concerns.
3. The 2004 EQIP Costs Lists, downloaded periodically from the ProTracts database at ITC, links to the 2004 costs lists.

The cooperative effort between NRIAI and NRCS allows public access to the Texas 2004 EQIP program using the county databases developed by the district conservationists to serve county specific EQIP program information.

The editing Web site includes a link to the Microsoft Access database and HTML instructions to customize each county. The database includes certification columns for each State and zone program manager to certify the content.

The EQIP site is streamlined and user-friendly. In the future, this site may serve as a model for other programs that require detailed county-based information. Extending this procedure to other Texas programs is simple and quick.

Texas plans to obtain two servers to host this site and future program sites — one to service the public in the state office and one for development work by the Webmaster. Using two machines also allows separation from the editing database to the public site. The ITC provided the alias, http://www.programs.tx.nrcs.usda.gov/eqip2004/, which will be redirected from the NRIAI server to the State Office server. Visit the detailed description of this project at http://www.nriai.nrcs.usda.gov/technical/Webdev/webworktxeqip.html.

For more information, contact:
David Buland
Natural Resources Inventory and Analysis Institute
254-770-6522
david.buland@usda.gov

or

Kathy Dean
NRCS Texas
281-469-7856 x108
Kathy.Dean@tx.usda.gov

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#8 The EconDoc Exchange: Ahuachapan Irrigation Case Study

The EconDoc Exchange is a new online economics network that enables persons to build, edit, store, and exchange economics documents. The initial documents include professional profit and cost estimates.

A case study showing how to use EconDocs and basic economics information to support conservation planning will be available in June. The case study focuses on irrigation water management in Ahuachapan, El Salvador. The study shows how to integrate capital investment analysis (i.e., irrigation investments) with profit analysis (i.e., crop budgets).

Visit the EconDocs site at: http://ssiapps.sc.egov.usda.gov/EconDocs/Default.aspx.

Members of a local irrigation association explain pasture irrigation using dirt canals in San Pedro Puxtla, El Salvador

We are interested in developing additional case studies for other conservation issues. Please contact Kevin Boyle at Kevin.Boyle@usda.gov if you have an interesting case study. We are especially interested in using digital video in the next case studies.

For more information, contact:
Kevin P. Boyle
Social Sciences Institute
970-295-5523
kevin.boyle@usda.gov

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NEW PERSONNEL APPOINTMENTS

#9 National Plant Materials Program Manager Selected

Bob Escheman has been selected as the National Program Manager for the Plant Materials Program in Washington, D.C. He will assume his position on June 14, 2004.

For more information, contact:
Diane Gelburd
Ecological Sciences Division
202-720-2587
diane.gelburd@usda.gov

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HONORS

#10 Plant Materials Program Presents Service Awards

The Plant Materials Program recognized several employees for outstanding service at the National Plant Materials Program and Grazing Lands Coordinators Meeting in St. Louis.

Awardees included:

- Outstanding Employee Award, 2002—Larry Holzworth, plant materials specialist, Montana. Holzworth was recognized for promoting plant materials technology in Montana and Wyoming through field plantings and field staff assistance. He also coordinates an international germplasm exchange program with Inner Mongolia.
- Outstanding Employee Award, 2003—Dan Ogle, plant materials specialist, Idaho. Ogle was recognized for his plant materials leadership throughout the Intermountain West, including a field trial program in Idaho and Utah, and numerous training sessions and technical publications.
- Outstanding Team Award, 2002—National Plant Materials Center, Beltsville, Maryland. The staff was recognized for national coordination of the Plant Materials Program including Web site design, database and publication management, and overall promotions.
- Outstanding Team Award, 2003—Elsberry Plant Materials Center, Missouri. The staff was recognized for excellent plant science technology and customer service, including programs such as the Iowa Roadside Vegetation Project.
- Notable Achievement Award, 2002—Bruce Munda, plant materials specialist, Arizona. Munda was recognized for his comprehensive wildfire recovery plans assisting public and private landowners, and for his "Wildfire Risk Reduction and Recovery Tips for Homeowners" publication.
- Notable Achievement Award, 2003—Glenn Sakamoto, plant materials center manager, Hawaii. Sakamoto was recognized for adapting innovative technologies, such as piligrass bales, to stabilize roadways and slopes on Kaho'olawe Island.
- Notable Achievement Award, 2003—Jody Fagan (formerly Jody Holzworth), public affairs specialist, Idaho. Fagan was recognized for developing marketing tools, such as the *Plant Solutions* newsletter, and improving overall program visibility.

- Special Service Award, 2002—Bob Glennon, former plant materials specialist, now with United States Fish and Wildlife Service in North Carolina. Glennon was recognized for continuing to promote the importance of the Plant Materials Program in natural resource conservation, including organizing the Eastern Native Grass Symposia.
- Special Service Award, 2003—Calvin Ernst, Owner, Ernst Conservation Seeds, Pennsylvania. Ernst was recognized for promoting the Plant Materials Program, producing program plant releases and providing leadership in the native plant industry.
- Meritorious Service Award, 2004—Jimmy Henry, plant materials center manager, Missouri. Henry was recognized for 35 years of plant materials excellence including providing ongoing plant technology transfer to Iowa, Illinois, and Missouri.

John Englert, manager for the National Plant Materials Center in Beltsville, Maryland, was also recognized with a special award from his peers for his continual leadership and coordination of the program nationwide, including serving as the Acting Program Leader in 2004.

For more information, contact:
Jody Fagan
Idaho State Office
208-378-5725
jody.fagan@id.usda.gov

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NRCS TECHNOLOGY NEWS

Bruce Knight, Chief, Natural Resources Conservation Service
Lawrence E. Clark, Deputy Chief for Science and Technology
Maurice J. Mausbach, Deputy Chief for Soil Survey and Resource Assessment

NRCS Science and Technology Consortium staff should send information for ***NRCS Technology News*** to:

Barbara Wallace, Editor
Social Sciences Institute
616-942-1503
barbara.wallace@usda.gov

Katherine Sikma, Editorial Assistant
Social Sciences Institute

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